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REMARKS

Claims 1-20 are pending in this application. Claims 1 and 11 have been amended.

Claims 1-8, 11-20 were rejected under 35 USC §103(a) as being unpatentable over Cowan et al. ("RITA - An Editor and User Interface for Manipulating Structured Documents"; Pub Data 1991) in view of Lindbald et al. (Publication No. US 2004/0103091 A1; Filing Date June 13, 2003) and further in view of Brockway et al. (Publication No. US 2004/0249795 A1; Filing Date June 5, 2003). Claims 9 and 10 were rejected under 35 USC §103(a) as being unpatentable over Cowan et al. ("RITA - An Editor and User Interface for Manipulating Structured Documents"; Pub Data 1991) in view of Lindbald et al. (Publication No. US 2004/0103091 A1; Filing Date June 13, 2003) and further in view of Brockway et al. (Publication No. US 2004/0249795 A1; Filing Date June 5, 2003) and further in view of Kotsakis ("Structured Information Retrieval in XML Documents"; Publication Date 2002).

A. Independent Claim 11 is directed to a method for authoring of a structured document which suggests content fragments to the user.

Claim 11, as amended, is directed to a method for authoring of a structured document, wherein a structured document comprises a plurality of content elements wrapped in pairs of tags, comprising: generating content elements wrapped in pairs of tags; and for a selected tag, suggesting an optimal content fragment according to a content suggestion procedure; wherein the content suggestion procedure comprises: providing a plurality of sample structured documents; analyzing the sample structured documents for content fragments; deriving a set of content fragments from the sample structured document associated with the selected tag; evaluating the set of content fragments according to a content fragment suggestion criteria to determine an optimal content fragment suggestion for the tag, wherein the optimal content fragment suggestion is the most probable content fragment for the selected tag.

RITA does not teach "suggesting an optimal content fragment according to a content suggestion procedure." RITA teaches a method of authoring new structured documents (and editing existing structured documents. RITA teaches creating structured documents using pre-defined document classes (each document class has a particular document structure, which is displayed to the user in a user interface). Nothing in RITA teaches or suggests "for a selected tag, suggesting an optimal content fragment according to a content suggestion procedure. At

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most RITA suggests "tags" that may be used in accordance with a defined template. "When the user wishes to enter a new document element, the cursor is placed on a tag in the structure window and a structure menu appears at the bottom of the screen as shown in Figure 4." See page 131 of RITA, third paragraph.

None of Lindblad or Brockway teaches or suggests "suggesting an optimal content fragment" in response to a selected tag element.

B. Independent Claim 1 is directed to method for converting a generic document into a structured document which suggests optimal tags to the user.

Claim 1, as amended, is directed to a method for converting a generic document, wherein a generic document comprises a document in a particular format type, into a structured document, wherein a structured document includes a plurality of content elements wrapped in pairs of hierarchically nested tags, comprising: parsing the generic document of the particular format type containing content into a plurality of content elements; and for a selected content element, suggesting an optimal tag according to a tag suggestion procedure; wherein the tag suggestion procedure comprises: providing sample data in the form of structured sample documents; analyzing patterns in the sample data to derive a set of tag suggestions and tag suggestion rules; deriving a set of candidate tags from the set of tag suggestions for the selected content element in accordance with the tag suggestion rules; and evaluating the set of candidate tags according to tag suggestion criteria to determine an optimal tag for the selected content element.

RITA does not teach "for a selected content element, suggesting an optimal tag according to a tag suggestion procedure".

RITA teaches a method of authoring new structured documents. RITA teaches creating structured documents using pre-defined document classes (each document class has a particular document structure, which is displayed to the user in a user interface). Figure 3 of RITA shows how the user can create a document of a particular document class. The structure for the defined document class is shown on the left of the interface. The user creates the text of the document by typing in the window on the right.

RITA suggests tags to users through the user interface (Fig. 3). These tag suggestions are based on the user selecting a particular document class. The tag suggestions for each document

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class are created by a document administrator or expert user and displayed in a window for the user to select. The user must guess the appropriate tag suggestion for each part of the document he is creating. "When the user wishes to enter a new document element, the cursor is placed on a tag in the structure window and a structure menu appears at the bottom of the screen as shown in Figure 4. Only elements that can be legally inserted before the cursor are shown in the structure menu." See page 131 of RITA, third paragraph.

RITA recognizes that displaying all legal tags can be confusing to a novice, so RITA has a simple (terse) and complex (verbose) mode and allows the user to toggle between the two. In verbose mode all the valid tags appear in the structure menu. See page 132, last paragraph of RITA. Other than hiding tags attached to "small items" such as single words or phrases in terse mode (so as not to disrupt the flow of text), no specifics are given as to how terse mode is defined. See page 132 of RITA, last paragraph. None of the tags suggested in the structure menu of RITA are indicated as being optimal.

In contrast, in Applicants' method, the tag suggestion procedure comprises: providing sample data in the form of structured sample documents; analyzing patterns in the sample data to derive a set of tag suggestions and tag suggestion rules; deriving a set of candidate tags from the set of tag suggestions for the selected content element in accordance with the tag suggestion rules; and evaluating the set of candidate tags according to tag suggestion criteria to determine an optimal tag for the selected content element.

The combination of RITA, Lindblad and Brockway does not teach or suggest "for a selected content element, suggesting an optimal tag according to a tag suggestion procedure."

Lindblad describes a structural textual classification system for classifying elements in an XML database. The Examiner cited paragraph 56 of Lindblad:

In the preceding examples, the data sets are text documents. Much research and many systems are known for characterizing text [sic] documents, and analyzing the resulting qualities. For example, a search engine characterizes text documents by their content words, relative placement and occurrence of words and possibly their storage location and an analysis process selects text documents by whether or not they meet some specified search query constraint. In many cases, where the data sets are XML documents, they are often characterized as if they were just text documents. This does not yield desirable results in many cases.

Lindblad wants to improve search results of XML documents by taking into account the

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structure of the XML documents. Instead of searching an XML document as a text document (and treating the tags as just text), Lindblad wants to use the structure of the XML documents to improve the search results. Lindblad considers that two documents having more structure elements in common will be more similar than two documents that may have more text in common. See paragraph [0066] of Lindblad. Lindblad uses a training set to characterize XML documents and fragments.

If Lindblad were combined with RITA, at most Lindblad would be used to create different document class templates for use in the document class database of RITA. One skilled in the art, when combining Lindblad and RITA would look to the techniques of Lindblad to assist with creating the class structure that would be used for a particular document type. See RITA page 131, second paragraph. Creating a document template is not the same as suggesting an optimal tag.

Brockway is concerned with the problem of returning better search results. Brockway wants to improve search results so the search results take into account semantics. In paragraph 84 of Brockway, Brockway describes scanning through a tree structure for the [current] document and through a tree structure of a model document structure, comparing the two trees, incrementing an integer score for all points of positive comparison, and returning a score value. In paragraph 86 of Brockway, Brockway states that if the score exceeds the threshold, runHeuristic concludes that the semantics of its document structure template are good for the current document and sets a reference to its document structure template in the indexing search engine. In contrast, Applicants' method includes, in part, "providing sample data in the form of structured sample documents; analyzing patterns in the sample data to derive a set of tag suggestions; deriving a set of candidate tags from the set of tag suggestions for the selected content element."

If Brockway were combined with Lindblad and RITA, at most Brockway would be used to refine the creation of different document class templates for use in the document class database of RITA. One skilled in the art, when combining Brockway and Lindblad and RITA would look to the techniques of Brockway to assist with creating the class structure that would be used for a particular document type. See RITA page 131, second paragraph. Refining a

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document template is not the same as suggesting an optimal tag.

None of RITA, Lindblad or Brockway, whether taken alone or in combination, teaches or suggests "for a selected content element, suggesting an optimal tag according to a tag suggestion procedure." In RITA, the user must select the tag from the list displayed on the left side of the interface. Lindblad is concerned with classifying elements in an XML database. Brockway compares document trees for the purpose of evaluating a document's semantics, making no tag suggestion in response to a selected content element.

Claims 1 and 11 are believed to be patentable over the references cited. Since Claims 2-10, and 20 depend from Claim 1 and Claims 12-19 depend from Claim 11, they are also believed to be patentable.

No additional fee is believed to be required for this amendment; however, the undersigned Xerox Corporation attorney hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Corporation Deposit Account No. 24-0025.

Reconsideration of this application and allowance thereof are earnestly solicited. In the event the Examiner considers a personal contact advantageous to the disposition of this case, the Examiner is requested to call the undersigned Attorney for Applicants, Jeannette Walder.

Respectfully submitted,



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Xerox Corporation
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